intracardially at the time of making the test, or intraperitoneally twenty-four hours before. Both pigs are injected with suspensions of the cultures to be tested intracutaneously. A fresh twenty-four-hour growth from an ordinary Loeffler slant is suspended in 25 to 30 c.c. of normal salt solution; 0.1 c.c. is injected into the skin. The results of the tests are noted in twenty-four to forty-eight hours. Virulent strains produce a definite local inflammatory lesion, which shows a superficial necrosis in forty-eight to seventy-two hours. In the control pig, the skin remains normal. With non-virulent strains no lesions will be found in either control or test animal.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF
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Arterial Degeneration.—F. W. Andrewes (*Annual Report of Local Government Board*, 1913–14, Appendix B, p. 151) has been appointed to carry on a series of investigations on the nature and cause of arterial degenerations. The present is the second of his reports and is divided into two parts. The first line of investigation concerned the degree to which infectious conditions played a part in the premature occurrence of arterial disease. The second part of the investigation was to find some criterion by which the degree of degeneration could approximately be judged. Some very interesting findings are reported concerning the infective process of the arterial wall. The author not only studied the histopathology of the arteries but a bacteriological analysis was undertaken of the tissues of the larger arteries. By his technique he was able to obtain cultures of the arterial tissues quite apart from the presence of bacteria within the lumen. Out of six cases of Streptococcus septicemia the organism was isolated four times from the aortic wall, the staphylococcus was obtained twice out of three cases of septicemia, while in seven cases of malignant endocarditis the organism was not found in the arterial tissues. Similar negative findings were obtained in pneumonia. On the other hand, a positive result was once obtained out of five cases of acute rheumatic fever. Associated with B. coli infection the aorta was invaded by this organism in four out of five cases. These findings are important in the light of recent work demonstrating the presence of an inflammatory reaction in the arterial wall in many cases of infectious disease. Andrewes found that inflammatory reactions were present in Staphylococcus and Streptococcus septicemia, malignant endocarditis, scarlet fever, acute rheumatic fever, measles, B. coli infection, and syphilis. He points out that insofar as the destructive nature of the disease is concerned, syphilis stands by itself. The study, in general, confirms and amplifies those previously made by others. As every individual suffers not a few infective processes during his lifetime, each of which probably has some effect upon the vessel wall, the author believes it very suggestive that we here are dealing with the cause of premature arterial degeneration. In the subsequent investigation of finding an index of the grade of degeneration it was shown that the calcium content of the arteries is a useful criterion. The method, however, is too cumbersome to serve any other than a suggestive study. He found that the calcium content remained low and fairly uniform up to the twentieth year. From this until the thirty-fifth year there was a gradual increase, while after middle life, the calcium content rises markedly. Furthermore, it was found that the calcium contant of the arteries in disease was greatly increased and he believed that the relative amount is a good index of the degree of degeneration. For syphilis, however, these figures have not the same value, as the calcium content is not equally increased when syphilis alone is present, but varies with the association of it with a true sclerosis of the artery.

Cancer of the Thyroid in Graves' Disease.—Although we associate Graves' disease with certain structural changes of thyroid gland, not a few cases are on record in which the characteristic hyperplasia was wanting and an entirely different process present in the gland. Langhans classified the epithelial changes of the thyroid in seven groups, each of which has been described associated with Graves' disease. LYON (*Ztschr. f. Krebsforsch.*, 1914, xiv, 501) described a case of columnar cell cancer of the thyroid in a female, aged twenty-one years. She had typical symptoms of Graves' disease with enlargement of the right lobe. The tumor was removed as well as a number of cervical lymph glands which were involved in metastatic growth. The primary tumor as well as the secondaries contained more or less colloid. The growth was typically cancerous and infiltrated the gland capsule and surrounding tissues. The cancerous alveoli showed no papillomatous ingrowths as is usually seen in hyperplasia of the thyroid. The author believes that the new growth developed upon a primary hyperplastic goitre or that cancer and Graves' disease simultaneously developed in a colloid struma. Whether the colloid material produced in cancer of the thyroid is abnormal and assists in producing symptoms he was unable to say.

Tumors in Amphibia.—Recent studies on tumors have shown that they are widely distributed in all types of animals and particularly in vertebrates. Spontaneous tumors of rats, mice, fowl and fish are now well known to us. A number of investigators have described tumors in amphibia. The majority of these were located in the skin and were of the nature of fibroma, adenoma, and cancer. The first of these were described by Eberth, 1868, consisting of multiple adenomata of the